

In the Claims:

Please add new claims 11-27 and amend claims 1, 9, and 10 as follows:

1. (Currently Amended) Apparatus for expressing milk from a breast comprising

a milk collector unit having

a manifold, the manifold having a vacuum path, the vacuum path having an inlet, an outlet and a midsection between said inlet and said outlet, said outlet being connected to a vacuum source,

a collection vessel operatively connected to said midsection of said vacuum path, and

a cup assembly, said cup assembly having a housing with an inlet for the breast, and an outlet operatively connected to said inlet of said vacuum path in said manifold, said cup assembly also having a liner in said housing, the vacuum path passing within said liner, said liner being secured with respect to said housing to form a space with said housing which is in communication with a pulsating pressure path and a pulsating pressure source, ~~pressure in said pulsating pressure path alternately pushing said liner inwardly within said housing and pulling said liner outwardly during positive and negative portions of a pulsation cycle, respectively, and~~

a vent in said pulsating pressure path providing controlled relief of pressure ~~during the positive and negative portions of the pulsation cycle., and~~

means for increasing the area for breast extension during milk expression.

2. (Original) The apparatus of claim 1 wherein said cup assembly includes a pad located in the input end of said housing.

3. (Original) The apparatus of claim 1 wherein the pressure in the pulsating path pulsates at a rate of 41 to about 65 pulses per minute.

4. (Original) The apparatus of claim 1 wherein the vacuum in the vacuum path varies between about .5" mercury and about 5" mercury through the pulsation cycle.

5. Canceled.

6. (Original) The apparatus of claim 1 comprising a filter between the vacuum source and the said outlet, said filter being substantially permeable to air when dry or wet, and substantially impermeable to liquid, fats and solid components in the milk.

7. (Original) The apparatus of claim 1 wherein said milk collector unit further includes a removable cap, said cup assembly being secured to said milk collector unit by both said manifold and said cap.

8. (Original) The apparatus of claim 7 wherein said vacuum path passes through said cap and said manifold to said cup assembly, and

said pulsating pressure path passes through said cap to a pressure port in said cup assembly, said pressure port being in communication with said space between said housing and said liner.

9. (Currently Amended) The apparatus of claim 1 wherein said vacuum source and said pulsating pressure source comprise an air pump having a movable diaphragm in a chamber, a shaft ~~which passes through~~operatively connected to said diaphragm and a motor which ~~moves~~oscillates said diaphragm axially by means of said shaft, said motor ~~rotating around the axis of said shaft~~being coupled to said diaphragm through threaded engagement that translates motor rotation into diaphragm oscillation.

10. (Currently Amended) Apparatus for expressing milk from a breast comprising

a milk collector unit having

a manifold, the manifold having a vacuum path, the vacuum path having an inlet, an outlet and a midsection between said inlet and said outlet, said outlet being connected to a vacuum source,

a collection vessel operatively connected to said midsection of said vacuum path,

a cup assembly, said cup assembly having a housing with an inlet for the breast, and an outlet operatively connected to said inlet of said vacuum path in said manifold, said cup assembly also having a liner in said housing, the vacuum path passing within said liner, said liner being secured with respect to said housing to form a space with said housing which is in communication with a pulsating pressure path and a pulsating pressure source, ~~pressure in said pulsating path alternately pushing said liner inwardly within said housing and pulling said liner outwardly during positive and negative portions of a pulsation cycle, respectively, and~~

means for increasing the area for breast extension during milk expression,

wherein the pressure in the pulsating path pulsates at a rate of 41 to about 65 pulses per minute.

11. (New) The apparatus of claim 1 wherein said means for increasing the area for breast extension comprises a boss.

12. (New) The apparatus of claim 11 wherein said boss is part of said manifold.

13. (New) The apparatus of claim 1 wherein said liner is secured with respect to said housing at said first and second ends of said liner, said first and second ends being wrapped around respective ends of said housing.

14. (New) The apparatus of claim 1 wherein said collection vessel has an inlet adjacent said manifold, said inlet having a one-way valve.

15. (New) The apparatus of claim 14 wherein said one-way valve is a duck bill valve.

16. (New) The apparatus of claim 1 wherein said cup assembly is press fit in said manifold.

17. (New) The apparatus of claim 1 wherein pulsating pressure pulses generated by the pulsating pressure source increase the vacuum at the breast.

18. (New) The apparatus of claim 1 wherein said vacuum source produces a fairly steady vacuum at the breast without pulsation pressure, the vacuum periodically increasing when pulsation pressure pulses are applied to said liner through said space.

19. (New) The apparatus of claim 18 wherein said boss is part of said manifold.

20. (New) The apparatus of claim 10 wherein said liner is secured with respect to said housing at said first and second ends of said liner, said first and second ends being wrapped around respective ends of said housing.

21. (New) The apparatus of claim 10 wherein said collection vessel has an inlet adjacent said manifold, said inlet having a one-way valve.

22. (New) The apparatus of claim 20 wherein said one-way valve is a duck bill valve.

23. (New) The apparatus of claim 10 wherein said cup assembly is press fit in said manifold.

24. (New) The apparatus of claim 10 wherein the pressure pulses increase the vacuum at the breast.

25. (New) The apparatus of claim 10 wherein said vacuum source produces a fairly steady vacuum at the breast without pulsation pressure, the vacuum periodically increasing when pulsation pressure pulses are applied to said liner through said space.

26. (New) Apparatus for expressing milk from a breast comprising
a milk collector unit having
a manifold, the manifold having a vacuum path, the vacuum path having
an inlet, an outlet and a midsection between said inlet and said outlet, said outlet being connected
to a vacuum source,
a collection vessel operatively connected to said midsection of said
vacuum path, and
a cup assembly, said cup assembly having a housing with an inlet for the
breast, and an outlet operatively connected to said inlet of said vacuum path in said manifold,
said cup assembly also having a liner in said housing, the vacuum path passing within said liner,
said liner being secured with respect to said housing to form a space with said housing which is
in communication with a pulsating pressure path and a pulsating pressure source,
said vacuum source producing a fairly steady vacuum at the breast in the
absence of pulsation pressure, pulsating pressure pulses produced by said pulsating pressure
source periodically increasing said vacuum within said liner.

27. (New) The apparatus of claim 26 wherein said vacuum draws said liner toward the breast, and said pulsating pressure pulses expand said liner away from the breast when the vacuum within said space is increased.